

AMRITA VIDYALAYAM

AMRITA PRE BOARD EXAMINATION 2 - 2018 - '19

Class : XII

Marks : 70

Time : 3 hrs

BIOLOGY

GENERAL INSTRUCTIONS:

1. All questions are compulsory.
2. This question paper consists of four sections - A, B, C and D
3. Internal choice is given in all the sections. A student has to attempt only one of the alternatives in such questions.
4. Section - A contains 5 questions of 1 mark each.
5. Section - B has 7 questions of 2 marks each.
6. Section - C is of 12 questions of 3 marks each
7. Section - D has 3 questions of 5 marks each.
8. Wherever necessary, the diagrams drawn should be neat and properly labelled.

SECTION - A

1. Mention any two conditions that enhance chances of syngamy in organisms exhibiting external fertilization.

OR

How many microspore mother cells would be required to produce one hundred pollen grains in a pollen sac and why?

2. Write the scientific name of the microbe used for fermenting malted cereals and fruit juices.
3. State what happens when an alien gene is ligated at Sal I site of pBR 322 plasmid.
4. Name a molecular diagnostic technique to detect the presence of a pathogen in its early stage of infection.
5. Define ecological succession.

OR

Define climax community.

SECTION - B

6. A student on a school trip started sneezing and wheezing soon after reaching the hill station for no explained reasons. But on return to the plains, the symptoms disappeared. What is such a response called? How does the body produce it?

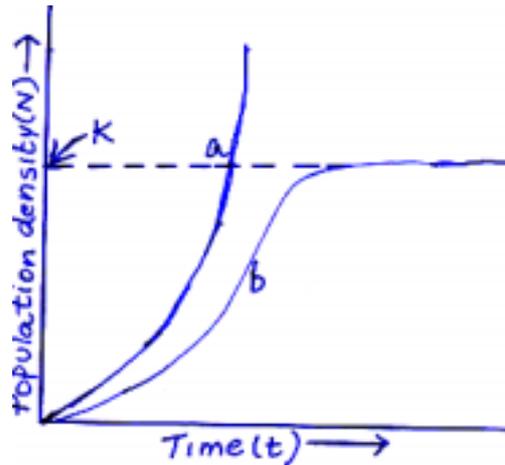
OR

Identify A, B, C and D in the table given below.

Crop	Variety	Resistance to Disease
A	Himgiri	Hillbunt
Brassica	Pusa Swarnim	B
Cauliflower	C	Black Rot
D	Pusa Komal	Bacterial Blight

7. Explain the dual function of AUG codon. Give the sequence of bases it is transcribed from and its anticodon.
8. A and B are two different cloning vectors in two different bacterial colonies cultured in chromogenic substrate. Bacterial colonies with cloning vector A were colourless, whereas those

- many gradations. Explain giving reasons how it is possible.
24. Study the graph given below.



- What does the curve 'a' represent in the graph?
- Which one of the two curves is considered a more realistic one for most of the animal populations?
- Which curve would depict the population of a species of deer if there are no predators in the habitat? Why is it so?

SECTION - D

25. Looking at the deteriorating air quality because of air pollution in many cities of the country, the citizens are very much worried and concerned about their health. The doctors have declared health emergency in the cities where the air quality is very severely poor.
- Mention any two major causes of air pollution.
 - Write any two harmful effects of air pollution to plants and humans.
 - As a captain of your school Eco-club, suggest any two programmes you would plan to organise in the school so as to bring awareness among the students on how to check air pollution in and around the school.

OR

Conserving natural resources is the need of the hour. Organic farming is one of the ways of conserving natural resources, as it allows maximum utilization of the resources. A farmer, Ramesh Chandra Dagar, in Sonapet, Haryana is just doing this.

- What is meant by integrated organic farming?
 - List the different activities that he could have possibly included in organic farming.
 - Describe how these activities can be integrated.
26. a) Write the scientific name of the organism Thomas Hunt Morgan and his colleagues worked with for their experiments. Explain the correlation between linkage and recombination with respect to genes as studied by them.
- b) How did Sturtevant explain gene mapping while working with Morgan?

OR

- State the 'Central dogma' as proposed by Francis Crick. Are there any exceptions to it? Support your answer with a reason and an example.
 - Explain how the biochemical characterisation of 'Transforming Principle' was determined, which was not defined from Griffith's experiments.
27. a) Draw a diagram of the adult human female reproductive system and label the different.
- parts of fallopian tube
 - layers of uterus wall.
- b) Explain the events during fertilization of an ovum in humans.

OR

- a) Draw a diagrammatic sketch of a transverse section of an anther of an angiosperm. Label its different walls and the tissue forming microspore mother cells.
- b) Describe the process of microsporogenesis upto the formation of a microspore.
- c) Write the function of 'germ pore' in a pollen grain of an angiosperm.